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ALASKA INSECTS.

BY W. J. HOLLAND, LL.D.

PART I.

Enumeration of the insects collected in Alaska by Rev. S. Hall Young and Rev. M. E. Koonce, during the Summer of the year 1899, with descriptions of some new species and varieties.

The labors of Rev. S. Hall Young as a missionary and explorer in Alaska are well known in ecclesiastical and educational circles. His young associate, Rev. M. E. Koonce, has only recently entered upon his field of labor on Alaskan soil. Though their professional duties leave but scant leisure for the prosecution of researches in the domain of nature, they have both kindly fulfilled the promise, given me before starting upon their journey to the north, to collect such insects as they might happen to find in their journeyings to and fro. The accompanying list is published as serving to throw some light upon the fauna of this, as yet, only very imperfectly explored quarter of our continent.

ODONATA.

Genus **ANAX** Leach.

1. **A. junius** Drury.

1 ♂, mountains between Mission and Forty-Mile Creeks, Alaska, July 25. (Young.)

1 ♂, Eagle City, Alaska, Aug. 3. (J. Murray Presnall.)

ORTHOPTERA.

Genus **ARPHIA** Stäl.

2. **A. frigida** Scudder.

Three specimens, Eagle City, Alaska, July 12. (Koonce.)

I am indebted to Dr. S. H. Scudder for the identification of the species.

LEPIDOPTERA.

Rhopalocera.

Family NYMPHALIDÆ.

Sub-family NYMPHALINÆ.

Genus **BRENTHIS** Hubner.

3. **B. helena** Edwards.

The specimens referred to this species are somewhat smaller than the types, and not so brightly colored. The specimens are, however, somewhat worn. Among them is an aberrant female, which, while agreeing quite closely on the under side with the other specimens, is much brighter upon the upper side, and has the inner area of the wings less heavily marked with fuscous, and the dark spots and lines quite fine and light.

2 ♂♂, 3 ♀♀, mountains between Forty-Mile and Mission Creeks, Alaska, July 20–26. (Coll. Young.)

4. **B. charicles** var. **arctica** Zetterstedt.

This small, dark-colored variety has hitherto only been known from Greenland. I obtained a small series from Mr. Young, agreeing perfectly with specimens in my collection obtained a number of years ago from Dr. Staudinger, who received them from Greenland.

2 ♂♂, American Creek, Alaska, July 15; 9 ♂♂, 2 ♀♀, mountains between Forty-Mile and Mission Creeks, July 20–26. (Coll. Young.)

5. **B. boisduvali** Duponchel.

One specimen only was obtained. I cannot agree with Elwes in treating this form as a mere variety of *B. charidea* Schneider.

6. **B. pales** Schiffermueller, var **alaskensis** var. nov.

Unfortunately, the collection contains only a single specimen of this interesting form. It differs widely upon the upper surface from specimens of *B. pales* coming from various European localities and contained in my collection. It comes nearer in general aspect to the variety named *generator* by Staudinger, coming from the Pamir and Transalai regions of Asia, but is smaller. The fuscous area of the basal portions of the primaries and secondaries is reduced, extending outwardly only to the middle of the cell, and the entire wing beyond this is bright reddish fulvous, with the characteristic lines and spots narrow and fine. The under side is marked much as in typical *pales*.

Expanse 33 mm.

1 ♂, mountains between Forty-Mile and Mission Creeks, July 20. (Young).

7. **B. freija** Thunberg.

There is an interesting series of this species, mostly females, all more or less worn, showing that, when obtained, they had already been long upon the wing. If collections could be made in the locality where they were found at an earlier date, no doubt better specimens could be obtained.

2 ♂ ♂, White Horse, N. W. Territory, June 24; 2 ♀ ♀, Lake Labarge, June 27; 1 ♀, Fort Selkirk, June 28; 3 ♀ ♀, mountains between Forty-Mile and Mission Creeks, July 20–26. (Young *legit*).

8. **B. polaris** Boisduval.

The collection contains one good pair and one badly worn female of this species. All of the specimens agree perfectly with typical examples obtained from European localities and various points in boreal America.

1 ♂, 2 ♀ ♀, mountains between Forty-Mile and Mission Creeks, July 20. (Young, Coll.)

9. **B. youngi** sp. nov.

♀—The upper side of both wings is pale fulvous, with the base of the primaries as far as the middle of the cell, and the secondaries from the

base outwardly to beyond the end of the cell and as far as the inner angle grayish fuscus. On the primaries, the space between the middle spot on the cell and the K-shaped spot at the end of the cell is pale, almost white. The transverse median line of spots and the submarginal lines of rounded dots are marked on either sides by paler shades, almost white. On the secondaries, the transverse median band of spots is heavy and black, and coalesces near the origin of the median nervules with the dark fuscous shade which obscures the base of the wing. Standing out prominently between this band and the dark fuscous inner shading are two pale quadrate spots situated just beyond the end of the cell. The fringes are white, checkered with fulvous at the end of the nervules. On the lower side, the primaries are quite evenly very pale fulvous, with the characteristic markings of the genus very faintly indicated. The secondaries on the inner half are reddish-ochraceous, the median band of spots characteristic of the genus being faintly indicated in a slightly lighter shade, each spot being defined inwardly and outwardly by fine reddish lines. From the origin of the third median nervule and the inward inner margin just beyond this median band is a dark brown shade. The outer half of the wing is very pale ochraceous, inclining to whitish, with the discal row of spots and the submarginal row of hastate markings very faintly indicated. The costa is marked by a narrow even line of silvery white. The only spot showing a tendency to present a silvery appearance is the spot shaped like an hour-glass, forming the upper spot in the median band; the upper edge of which spot, immediately contiguous to the fine silvery line, shows a silvery reflection. The upper side of the thorax and abdomen is blackish, the lower side reddish. The antennæ are black on the upper side, reddish on the under side. The legs are reddish-brown throughout.

Expanse 30 mm.

1 ♀, mountains between Forty-Mile and Mission Creeks, N. E. Alaska, June 20. (Young).

This interesting form is so thoroughly distinct, from the character of the markings on the under side, that I do not hesitate to describe it as a new species. I cannot bring myself to regard it as a mere aberration, after careful comparison with all the other species of the genus known to me; and my collection contains a good series of specimens of every species which has been described.

10. **Melitæa helvia** Scudder.

♂—Closely allied to *M. taylori* Edwards. The resemblance upon the upper side is very close, but the median band of light spots on the secondaries is less strongly developed, and the marginal and submarginal spots on the primaries are much larger and not nearly so heavily bordered with

black as in *taylori*, the black borders of these spots being reduced to fine lines, so that the general appearance of the wings is that of a paler insect. The most characteristic difference, however, is found in the markings of the under side of the wings. In *M. taylori* the light spots are conspicuous, and are well defined, both externally and internally, by heavier shades. In *M. helvia* only the spots in the middle and end of the cell and a few near the apical region are bright and distinctly defined. All below the median vein and the upper median nervule in *M. helvia* are quite obscure and stand forth indistinctly upon a much paler fulvous ground than in *M. taylori*. In *M. taylori*, on the secondaries, the median band of light spots is bordered externally by two fine black lines, including between them a dark reddish-brown or almost blackish shade. The median band in *M. helvia* is not thus externally defined by a heavy dark shade. The facies of the under side of the specimen is wholly different from any specimens of *M. taylori* known to me, because of these facts which I have pointed out.

♀—The female is like the male, but larger. The same differences from *M. taylori* which were noted in the case of the male reveal themselves in the case of the female as to the markings on the under side of the wing, and it will be perfectly easy to discriminate the two forms by noting the points to which I have called attention.

Expanse ♂ 32 mm.; ♀ 35 mm.

2 ♂ ♂, White Horse, N. W. Territory, June 24. 1 ♀, Eagle City, Alaska, July 8. (Young).

The type of *helvia* is reputed to have been destroyed in the Chicago fire. After carefully comparing Dr. Scudder's description with the specimen before me, in which work I was joined by Dr. Skinner, I am forced to the conclusion that the specimens before me are this long-lost species. Because of its evident nearness to *M. taylori*, which is well known to collections, I have given the foregoing comparison of the two forms to aid in their proper discrimination.

Genus **PHYCIODES** Doubleday.

11. **P. pratensis** Behr.

I refer the specimen before me to this species, although upon the under side they are much paler, and prevalently less distinctly marked than specimens of *P. pratensis* coming from more southern latitudes. Most of the specimens are, however, too badly worn to enable me to be quite sure whether this is a positive characteristic of the form. The species of this genus appear to me to badly need revision.

2 ♂ ♂, Fort Selkirk, N. W. Territory, June 28; 1 ♁, 3 ♀ ♀, Eagle City, Alaska, July 8–12. (Young *legit.*)

Genus **GRAPTA** Kirby.

12. **G. hylas** Edwards.

1 ♁, Tagish Lake, British Columbia, July 21. (Koonce *legit.*)

2 ♀ ♀, Rampart, Alaska, August 12. (Young, *legit.*)

13. **G. gracilis** Grote and Robinson.

1 ♁, Tagish Lake, B. C., July 21. (Koonce *legit.*)

1 ♁, 1 ♀, White Horse, N. W. Territory. (Young.)

1 ♁, 5 ♀ ♀, Rampart, Alaska, August 6–17. (Young.)

1 ♁, American Creek, Alaska, August 18. (Young.)

Genus **VANESSA** Fabricius.

14. **V. milberti** Godart.

Three badly worn females, Skaguay, Alaska, June 12. (Young.)

15. **V. antiopa** Linnæus.

One female with the blue submarginal spots near the inner angle of the secondaries obsolete. Eagle City, Alaska, August 18. (J. L. W.)

Subfamily SATYRINÆ.

Genus **CŒNONYMPHA** Westwood.

16. **C. kodiak** var. **yukonensis** var. nov.

♂—The primaries on the upper side are bright ochraceous, with the outer margins and the costa shading into gray. A whitish subapical band, very poorly defined, extends beyond the cell from below the subcostals to the second median nervule, as in *C. kodiak* Edw. and *C. ampelos* Edw. The secondaries on the upper side are dark gray, very slightly tinged with ochraceous, traversed by an obscure whitish, irregular median band, interrupted between the first and second median nervules. On the under side the primaries are dark ochraceous (in one example deep chestnut-brown), fading at the apex and on the outer margins into pale cinereous. The white band indistinctly seen on the upper side is reproduced on this side, sharply defined and solidly white. A small dark-pupiled ocellus is located near the outer margin, between the upper and lower radials. The secondaries on the lower side are dark fuliginous, passing into pale cinereous on the outer margin, with the median band of white clearly and sharply defined. A submarginal series of ocelli is faintly indicated.

♀—The female is like the male, but larger, and throughout paler in color on both sides of the wings.

Expanse ♁ 30 mm.; ♀ 32 mm.

This form in the arrangement of the markings comes nearest to *C. kodiak*, with the type of which I have carefully compared it; but in color is nearer to *C. inornata*. It may be a distinct species.

2 ♁ ♁, Dawson, Yukon Territory, July 1; 1 ♂, Eagle City, Alaska, July 14; 2 ♁ ♁, American Creek, July 18. (Young *legit.*)

Genus **EREBIA** Dalman.

17. **E. disa** var **mancinus** Doubleday and Hewitson.

3 ♁ ♁, 1 ♀, White Horse, N. W. Territory, June 24. (Young.)

18. **E. rossi** Curtiss.

2 ♁ ♁, 1 ♀ mountains between Forty-Mile and Mission Creeks, N. E. Alaska, July 20–26. (Young.)

19. **E. epipsodea** Butler.

The collection contains two specimens departing somewhat widely from the typical form, but agreeing with examples labeled *E. epipsodea* in the Edwards' Collection, which came from Colorado, and presumably are conspecific with other examples conformed to type. These Alaskan and Coloradan specimens are characterized by their smaller size, the obsolescence of the ocelli and the diminution of the expanse of the red areas surrounding the ocelli which survive, and the breadth and distinctness of the dark median band on the lower side of the secondaries. The form has been named *brucei* by Elwes = *sine-ocellata* Skinner.

1 ♁, Eagle City, Alaska, July 11; 1 ♂, mountains between Forty-Mile and Mission Creeks, Alaska, July 20. (Young.)

20. **E. sofia** var. **alaskensis** var. nov.

The specimens are all characterized by the reduction of the number of the light spots, both on the upper and lower sides of the wings. In almost all of the specimens before me there are three spots on the primaries above and below, and but two spots on the lower side of the secondaries. Only one specimen approximates the typical form in the number of spots on the lower side of the wings.

9 ♂ ♂, Eagle City, Alaska, July 8–12: 1 ♂, American Creek, Alaska, July 18. (Young.)

21. **E. youngi** sp. nov.

♂—The upper side of both wings is dark velvety brown, almost black. The primaries are marked by a short, but relatively wide submarginal band of red spots, extending from the upper radial to the first median nervule, each spot pupilled with black. On the secondaries there is a submarginal series of similarly colored, rounded spots, most conspicuous between the median nervules, but not confluent, as on the primaries. On the under side the wings are a little paler than on the upper side. The primaries have the band of submarginal red spots of the upper side reproduced on this side, but the spots, while more confluent, if possible, than on the upper side, are less sharply outlined. The secondaries are crossed by a broad curved, median, dark band, defined both externally and internally by narrow black lines. This band is followed externally by a paler band, the ground-color being more or less profusely dusted with hoary scales, giving this band a grayish appearance. Succeeding this grayish band is a moderately wide marginal band of dark brown, of approximately even width along the outer margin of the wing. The ocelli of the secondaries are only faintly indicated on the under side as minute black points, corresponding in location to the black pupils of the red spots on the upper side.

♀—The female is a trifle less dark upon the upper side of the wings than the male, with the ocellated red spots more strongly developed on both the upper and under sides of the wings. The marginal dark band on the lower side of the secondaries is, in the specimen before me, more sharply defined internally than in the males, and is darker; so that the hoary band between the dark median band and this outer band stands forth very conspicuously and very clearly defined.

Expanse ♂ 33 mm.; ♀ 35 mm.

The species is not far from *E. dabanensis* Erschoff (cf. Romanoff, Mém. sur les Lépidoptrées, Vol. I, Pl. XXI, Fig. 1), and it has some resemblance to *E. vidleri* Elwes, with a specimen of which, in the possession of Dr. Skinner, I have compared it. It is, however, plainly distinct from both of these species.

3 ♂ ♂, 1 ♀, mountains between Forty-Mile and Mission Creeks, N. E. Alaska, July 20. (Young.)

Genus **ŒNEIS** Hübner.

22. **O. chryxus** Doubleday and Hewitson.

One of the females agrees fairly well with the type of *O. calais* Scudder. The others grade off toward the common Colorodan forms, but are dingier in color than most examples from Colorado. The solitary male does not differ materially from

males taken in Colorado, in which there occurs but one ocellus in the sub-apiacal region of the primaries.

1 ♂, 1 ♀, White Horse, N. W. Territory, June 24; 1 ♀, Fort Selkirk, June 28; 1 ♀, Eagle City, Alaska, July 10. (Young.)

23. **O. jutta** var. **alaskensis** var. nov.

The wings are thinner and more diaphanous than in *jutta* from Maine, Quebec and other localities to the south and east, as well as in examples of the typical form from Europe. The prevalent color is a sooty gray, and the spots on the upper side are far less conspicuous than in the normal form of *jutta*, and on the under side the wings are quite evenly marked by minute spots and strigæ, without any trace of a darker median band on the secondaries.

3 ♂ ♂, 2 ♀ ♀, mountains between Forty-Mile and Mission Creeks, N. E. Alaska, June 20; 2 ♂, 1 ♀ ♂, American Creek, Alaska, July 18. (Young.)

At first I was inclined to identify this with the form named *balder* by Boisduval; but a careful comparison of the specimens with his figures and his description in the Icones persuades me that the two forms are not the same.

Concluded in next issue.

A New Metrius from California.

By J. J. Rivers.

Metrius sericeus n. sp.

More robust, broader and darker than in *M contractus* Esch, and with a faint sericeous lustre. Head broad, with a deeply impressed arcuate line reaching over the frontis, curving upwards from the front ends of the super-orbital ridges, which latter finally deflexes behind the eyes. Prothorax subquadrate, with the side margins less sinuate than in the other species of the genus; hind margin bisinuate as usual, but the narrow elevated edges that extend inward from the angles are not present in this species, through the disc runs a median polished line that shines in contrast with the sombre tone that surrounds it. Elytra a third wider than the thorax, ventricose obscurely punctate-striate, the punctures distinct; the scutellum polished black like the median line of the thoracic disc; underside and legs black, shining, towards the tarsi growing reddish. Length 9 mm.

Two examples, found by Mr. Max Albright the present season upon the slopes of Mount Whitney, at an altitude of 7,000 feet.

Notes on a New Sugar-Beet Pest, with a Description of the Species.

By R. W. DOANE,
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Pullman, Washington.

The way in which a seemingly harmless insect may, under changed conditions, become, in a very short time, of serious economic importance is well illustrated by a species of *Aphis* that has been giving more or less trouble to beet-growers of this section during the last two or three seasons. We have here, feeding upon the roots of the *Polygonum aviculare* and *Achillea millefolium*, and more rarely on other plants also, a species of *Aphis*, which, while seldom occurring in large colonies, is pretty well distributed throughout the soil wherever these plants grow. The large amount of the white flocculent secretion with which the insect is covered makes its presence easily detected; the little spaces where the roots formerly ran, and any cracks or crevices in the soil near the infested plants, are more or less completely lined with this substance, which looks very much like a white mould, and indeed is often mistaken for such.

As long as this insect attacked only uncultivated plants, little or no attention was paid to it. But during the last three years it seems to have developed a remarkable liking for sugar beets, with a result that those interested in the growing of this plant have suffered considerable loss from the ravages of this new pest. If the season is favorable and the insect attacks the beets early, the yield may be very materially affected. It feeds wholly on the roots—sometimes occurring in sufficient numbers to entirely destroy the smallest rootlets; thus, of course, stopping the growth of the plant, and causing it to shrivel and become spongy. Certain growers report a large part of their crop thus destroyed; while others have only suffered from having the yield more or less decreased. In a bulletin soon to be issued by this station, the life-history of this insect, so far as it is now known, will be given in detail. Only brief notes need be given here.

The colonies found during the winter months consist of a

small number of individuals in all stages of development—from the small larva to the full-grown, viviprous, apterous female. During the months of April or May these colonies begin to grow rapidly, and by mid-Summer the whole root of the infested plant is often quite covered with the *Aphis* and the cottony secretion. Some time during the Summer—just how early has not yet been determined—winged forms begin to appear; these increase in number until as late as November 15th, when the winged individuals in the colony frequently outnumber the wingless forms. These winged forms are also agamic, viviprous females, no males having as yet been discovered. After leaving the plant, they sometimes fly for considerable distances before settling at the root of another plant, where a new colony, the Winter colony, is established. The beets may become infested either by one of these winged females establishing a colony on them, or, as is probably more often the case, by forms which are already in the soil attacking the small rootlets as soon as they are sufficiently developed.

The wing venation and the structure of the antennæ place this species in the genus *Pemphigus*, among the root-inhabiting forms; but, so far as I can learn, it has never been described. So a brief description is given:

Pemphigus betæ n. sp.—Winged, viviparous females: length 2 mm.; alar expanse 6.75 mm.; head, thorax and appendages bluish black, pruinose. Abdomen, after the hoary secretion is removed, dark-green with considerable flocculent matter on the posterior segments. Antennæ 1 mm. long, annulations indistinct; joints all somewhat constricted at base; third joint longest, last joint next in length and more slender than the rest; unguis distinct. Third and fourth joint with transverse sensoria. Eyes large, very dark brown. Wings somewhat smoky; stigma, all the veins and the narrow space between the costal and subcostal veins, brown; first and second discoidals arising close together, more rarely a very short distance apart; basal third of cubital obsolete. Apterous individuals yellowish, sometimes so covered with the whitish secretion as to make them appear almost white; legs, antennæ, distal half of back, and a rather large spot on the dorsal aspect of the head very dark brown; eyes very small, almost black; the white flocculent secretion is confined to the last three or four segments of the abdomen, and is often 1 mm. long, sometimes even longer.

Larvæ like the apterous individuals, only more slender, and in the earlier stages with only five joints to the antennæ, the last of which is the longest.

Pangonia Chrysocoma, Osten Sacken.

By JAMES S. HINE.

It was five or six years ago that I read in *Psyche*, Professor Aldrich's description of *Goniops hippoboscoides*. I was much interested in the species at the time, as it occurred so near the locality in which I had collected oftentimes, and also as I had previously become interested in the Tabanidæ, its natural family. On July 25, 1898, while collecting in a rocky woods in Medina County, Ohio, I was successful enough to procure a female of the species, and within the next ten days two more, but was not able to procure or see the male. The past Summer, in the same locality, on July 19th, a male was taken, but upon comparing it with males of *Pangonia chrysocoma*, Osten Sacken, taken at Pittsburg, Pa., I was convinced that it is that species.

Upon investigation of literature I find that Osten Sacken's description of the female of *P. chrysocoma* exactly describes the female which I identified by Aldrich's description and figure in *Psyche* as *G. hippoboscoides*, but does not mention the acute angle in which the eyes terminate above, a characteristic which is mentioned as one of the best characters of the genus *Goniops*. Since the wide front and small, acute-angled eyes are not to be found in the female of other species placed under *Pangonia* it might be well to retain *Goniops* for *chrysocoma*.

The habits of the species in the field are interesting. Several of the specimens taken were first located by means of the peculiar noise they make while at rest. They stationed themselves on the upper side of a leaf and by vibrating their wings, striking the leaf at each downward stroke, make a rattling noise which could be head plainly several feet away.

COLLECTING NOTES.

By FRED. C. BOWDITCH.

I passed the last three weeks of August at Northfield, Mass., a small town on the east bank of the Connecticut River, and adjoining the New Hampshire line. Early in the season I should judge the locality would be a fine collecting ground, as there is a good variety of meadow, hill, valley and forest suffi-

cient to afford a rich fauna. My visit was the fag end of the season, and though I worked hard the results were not very large. Five common species of *Cicindela* were in evidence, *repanda* being very abundant in the river banks. The Carabidæ were pretty well represented. The river banks producing various species of *Bembidium*, *Tachys* and *Dyschirius*, as well as *Omophron*, *Harpalus*, *Platynus*, *Amara*, etc. I looked particularly for *Cychrus*, but found only two specimens of the common *lecontei*.

Water-beetles were very abundant in numbers, though not particularly so in variety. Four species of *Dytiscus*, among them two of *marginicollis* (which is our rarest in Mass.), and six or eight *verticalis*: *Illybius 4-maculatus* Lec. and *biguttalus* Germ. were common, the latter very abundant, two or three species of *Agabus*, innumerable *Hydroporus undulatus* Say showing many interesting variations in spotting, and many hundreds of other specimens representing about a dozen species, also an example of *Hydrophilus ovatus* G. & H.

In this connection I will diverge a moment to describe my water net, which may be new to some readers, and which I find very efficacious and easy to use. Take an ordinary wire dish-cover, such as is used to keep flies from dishes, etc.; remove the handle, and close the wires where it has been inserted, and solder the cover by its narrow iron rim *inside* a short brass net-ring, which screws into an eight-foot bamboo handle. I use an 8¾-inch cover, and my ring is of quarter-inch brass wire—the whole screwed firmly into a one-inch bamboo stick. This makes an exceedingly stiff, rigid net, which will stand anything in the way of scraping round. The water passes through it with the greatest ease, and, after a little practice, the beetles can be scraped up, kept in, and taken out with amazing rapidity as compared with a cloth net. The motions in using must, of course, always be forward, so as to keep stuff in the net, and a simple shovel-like motion is often very effective, while a single back stroke cleans it. *Dystiscus marginicollis* is very lively in the water. I have known it to jump out of the net if the latter was free from debris, but a quick eye and hand will always be able to frustrate any such attempt. But it is

not only in scraping together material that time is saved, but also in the facilities offered for examining the catch. When sufficient material is in the net, pick out the large specimens, raise the net up and tip it half over, so that the sun will shine in, and, if possible, the wind will blow through it. The water will immediately drain off, and the small beetles will hasten to leave the drying debris and hurry to the edge of the net, where they pass under the eye of the collector, who easily picks out any he desires, and the rest walk out over the edge. Persons who have never used a wire net have no conception of the time saved and the amount of waste and material which can be passed upon by its use, and a net once made will last a long time and stand a deal of rough work. Some minute species pass through the meshes and are easily picked off outside.

One species of *Liodes* and about thirty of Staphylinidæ were turned up, while the Cocinellidæ were well represented, and a few interesting varieties occurred. The Endomychidæ gave six species, among them *Phymaphora pulchella* New. My first specimen of *Georyssus pusillus* Lec. was picked up on the river bank. A few good species of Nitidulidæ and Histeridæ occurred, among them one of *Saprinus fitchii* Mars. on sand on the river bank. I suspect this species of living on the sand or under debris on the water's edge, but the closest search failed to turn up a second specimen. In past years I have taken great numbers of *S. estriatus* Lec. on sand under debris on the beaches of Great Salt Lake, Utah. The Buprestidæ showed in seven or eight species, among them two examples of *Pœcilonota thureura* Say on poplar; it is probably common earlier in the season. About eight or nine species of Elater were taken, among them a pair of *Cryptohypnus pectoralis* Say in sand on the edge of a brook. Scarabs and Longhorns were sadly wanting, and the few that presented themselves were common. The Chrysomelidæ were fairly represented in number of species, but not specimens. Tenebrionidæ were conspicuous by their absence, while the Rhyncophora showed up a fine number of species and some few good things, notably a pair of *Splenophorus* found at the roots of water plants in a dried-up bog-hole.

There were a good many species scattered through the other small families, a considerable part of which would be classed by the collector as good or desirable things.

Last season I had the opportunity of overhauling two nests of the ordinary gray squirrel. Aside from fleas or one or two ticks, I found about a dozen or eighteen *Dendrophilus punctulatus* Say, three pairs of *Trox scaber* Linn. and one small undetermined species. A number of mouse nests showed three minute species, one of them a *Falagria*. I think a careful study of these nests will reveal many small forms, and somebody who is favorably situated should make a point of digging out and examining the burrows of our woodchucks, rabbits, foxes, etc., and the chances are they will be well repaid. On June 17, 1897, a great number of *Lixus concavus* Say were taken both singly and in pairs in *Rumex brittanica* Linn, (the great yellow water dock). Though a common species elsewhere, I have never seen it here before, so that its occurrence in numbers was rather interesting. By the way, I have a theory—which, perhaps, is shared by others—that no species is rare if collectors know when and where to look for it. They may be extremely local and be found only for a few days, but in that time and place they are common, or if even a part of the life-habits of a species can be found out, it usually ceases to be a rarity, while the pleasure of such a discovery compensates the finder for many disappointments and much hard work.

Brookline, Mass.

A New Species of Eutettix.

(JASSIDÆ, HOMOPTERA.)

By HERBERT OSBORN, Ohio State University, Columbus, O.

Eutettix magnus n. sp.

General aspect of *lurida*, larger, more conspicuously marked; elytra broader apically. Yellow, with dark brown fuscous and blackish markings on head, pronotum and elytra. A broad, black, frontal band extending to and enclosing the light-yellow occelli at each side. Length, to tip of elytra, ♀ 6.75 mm; ♂ 5 mm. To tip of abdomen, ♀ 5.50 mm; ♂ 2 mm. Width of pronotum, ♀ 2.50 mm.; ♂ 2 mm.

Head broadly lunate, vertex slightly longer at middle than next eye, a distinct but rather shallow transverse depression on anterior third in and

behind which the surface is minutely, longitudinally striate while in front, and passing over on to the front it is transversely striate; front, except at upper border, scarcely striate, very minutely punctate; antennæ overhung by a slight ridge; clypeus rather long, widening toward tip; loræ oval, slightly more elongate than in *lurida*, the margins of genæ meeting clypeus by a narrow margin. Pronotum short, sides rounded, carinate, posterior border scarcely concave, transversely striated; scutellum with very faint punctures and impressed lines. Elytra broad, narrowing slightly beyond the middle, with narrow appendix.

Color: vertex yellow, except anterior margin which is invaded by the broad frontal band which extends between the ocelli, enclosing one at either end, and which is broken at the center by a narrow line; face below the frontal band uniformly light yellow in the ♀, and with broken semi-arcs and borders of clypeus and loræ fuscous in the ♂; eyes, except for narrow yellow margin, brown; ocelli yellow; pronotum yellow with broad transverse fuscous band, broader in ♂ than in ♀; scutellum yellow; elytra brown in ♀ fulvous in ♂, the claval border in both deeply fuscous and apical part of clavus bearing in each a conspicuous yellow spot, forming with its fellow an oval sutural spot; apex with deep fuscous border in both sexes, costal border in ♀ whitish hyaline, in ♂ fuscous.

Beneath: ♀ light yellow, ♂ with pleural pieces fuscous; legs light yellow.

Genitalia: ♀ last ventral segment rather short, lateral lobes rounded; a median semi-circular lobe faintly carinate; pygofers with scattered short bristles near apex, scarcely exceeded by ovipositor. ♂, valve with a median, short, broad lobe, black; plates elongate-triangular; outer margin straight, with a fringe of short hairs.

Two specimens received from Mr. F. M. McElfresh, Champaign, Ill.; the female labeled "Marion Co., Ark., June 27, 1897," and the male "Morgan Co., Ill., June 29, 1892."

It is a large and striking species, and must be rather rare to have escaped notice heretofore. While there is quite a difference in size and some difference in color markings between the male and female as well as a wide difference in the recorded localities of capture, they possess so many striking points of agreement that I cannot doubt their affinity.

SMITHS' LIST.

By H. H. Newcomb.

Now that Prof. J. B. Smith's List of the Lepidoptera of Boreal America is out of print would it not be wise, before another list is published, to obtain an expression of opinion,

from collectors of Lepidoptera of their ideas or preferences so that suggestions may be received which will point out the defects of the old list and make possible a new or revised list which will meet the requirements of the majority.

On this supposition I venture to submit my own ideas on this subject.

I believe that it is a good plan to have a number for each species, and that if these numbers could be made permanent their effectiveness would be greatly increased. The general tendency is to use numbers on our exchange lists, and it is a great convenience, saving both time and labor. Numbers are even more useful for material in envelopes and boxes. For instance, suppose, after a hard day's collecting one has a lot of material to put up in papers, maybe 30 or 40 of one kind, 20 of another and so on, it is much easier to put on the numbers than to write the names in full.

And in order that each number may be permanent I would suggest that several vacancies be left in each genus, so that when a new species is named and numbered it may be inserted in the list. There is no need to economize as to numbers, as there is an inexhaustable supply from which to draw.

I would have each family commence on the even hundred, as as, for instance, Lycaenidæ at 300, the Papilionidæ at 500, etc., and each sub-order on the even thousand as Heterocera at 1000, Noctuina at 2000, etc. A number would then have more value than at present, as it would indicate at once the sub-order and family.

What a convenience it would be to those who keep records and notes on cards to have the cards arranged numerically, and how much confusion it would save where one insect has several names, as *Limenitis ursula*, which we hardly recognize as *Basilarchia astyanax* or *Nymphalis episteon*.

When the next list is published I would suggest that at a small additional expense a portion of the edition be printed on one side only of each page so that it might be cut up to serve the purpose of cabinet labels.

A simple but effective way of checking off one's collection is to place a small o in front of the name on the list where but

one specimen is possessed, or two o's, thus oo, if there are two or more of the same species in the cabinet, and add the necessary strokes to complete the male (♂) or female (♀) sign when the sex is determined. A list checked off in this manner is particularly useful when studying other collections.

I hope that a general expression of opinion on this subject will be forthcoming.

On the Habits of Tachopteryx Thoreyi.

(Order Odonata.)

By E. B. Williamson.

Tachopteryx Thoreyi Hagen has been taken in Massachusetts, New York, Pennsylvania, Maryland, Kentucky, North Carolina, Texas and Florida. Mr. J. L. Graf first observed the species in Pennsylvania; and I am indebted to him for the dates indicating the seasonal range of the species in Allegheny County, where he found it. Mr. H. D. Merrick, during the season of 1899, took the species in Beaver and Fayette counties, Pennsylvania. During June of 1899, Mr. Graf and the writer collected a few specimens near Pittsburg, in Allegheny County, in the locality where Mr. Graf had observed the species the year before. Our collecting ground was along Squan Run, a small western affluent of the Allegheny River, a few miles above the Ohio River. The creek has a length of ten or fifteen miles. A mile above its mouth it flows through a level valley, possibly an eighth or a quarter of a mile wide. The valley consists of pastured or cultivated fields, with some waste patches of willows and elders. The sides of the valley are shaly bluffs or hills, fifty or one hundred feet high, covered with brush, hemlocks and small timber. The stream zigzags across this valley, striking first one side, then the other. It has been a larger stream, and its course has changed from time to time during recent years, leaving occasional pools scattered over the valley. At one place there is a small swampy tract, an acre or two in extent, near the southern side of the valley. Here sedges, the brackenfern, turtle's head and closed gentian grow. In this valley, a mile in length, closed in by its wooded sides and cut by the small stream which wanders through it, *Tachop-*

teryx seemed to be at home. Oftenest we found them resting on the rail and board fences which separated the woodland from the open fields. Sometimes they were on logs or trees or clinging to a twig; always in the sunshine and in an open place, where sudden dashes in any direction after insect prey were possible. Rarely one was seen over the fields, possibly passing from one side of the valley to the other with swift, strong flight. At rest, they seem careless of danger. Possibly, as undisputed insect lords of the valley, they have grown to fear nothing. One will hang on a fence-post, its abdomen pressed against the wood. The insect-net is brought within an inch of it; but it never moves. To attempt to brush it from the post into the net may crush it. You touch the abdomen with the rim of the net. The dragon-fly moves impatiently and holds its abdomen away from the post. Then the net is moved up along the post till the abdomen hangs within the ring. A quick stroke and the thing is done. Once a male was seen within two feet of the ground, clinging to the trunk of a small sycamore; the writer was within half a dozen feet of the tree. Suddenly the dragon-fly dashed from the tree, seized a crane-fly, numbers of which were rising and falling within a yard's distance; then returned to the tree, alighting a little higher than its former resting-place. This was repeated several times, till the dragon-fly was resting ten or twelve feet from the ground. Each trip was made with great swiftness and vigor. It is surely its sense of power and superiority over its associates that makes it fall such an easy prey to the insectnet.

The earliest record for the species in Allegheny County is June 1, when one entered Mr. Graf's home in Pittsburg. On July 16, the latest date at which it has been observed, Mr. Graf took a specimen, which, contrary to their usual habits, was resting in the middle of a road. On June 11, recently-emerged individuals were taken. On that date and on June 17 the largest number of individuals was observed. On July 4, a tour of the fences did not yield a specimen; a solitary male came swiftly across the valley and passed out of sight through the woods on the hillside.

The nymphs of this genus are not known.

Arrangement of the extra-American Species of Mutilla.

(Described by Cresson and Blake) according to my classification of the Genus.

By WILLIAM J. FOX.

In the synopsis entitled "The North American Mutillidæ,"* it was found necessary to exclude the Mexican, Central American and West Indian species of that family for want of sufficient material from those regions. This want has not yet been remedied, and the species noted in these pages practically form the extra-American collection of the genus *Mutilla* of the American Entomological Society. While an arrangement of all the known species from the regions mentioned would be of more value, the present limited one will, perhaps, be not entirely useless.

2. Group **canadensis.**

M. izucar, *chiapa*, *auripes*, *psammadroma*, *lerma*, *bisignata*,† *gothica*, *petricola*, *minutissima*, *laticeps*, *xalapa*, *zapoteca*, *robinsoni*, all of Blake.

3*a*. Group **quadridens** nova.

M. quadridens Blake, represents a group not found in the United States, and is another link in the chain that proves the unity of the species of *Mutilla* under one genus. In the large spinose head and fiddle-shaped thorax it approaches group *canadensis*, but it differs in possessing a distinct pygidium, in which characteristic it separates itself from group *simillima*; and in the nodose first abdominal segment it is different from both of these groups. In the latter respect it shows its relation to groups *waco* and *asopus*, from both of which it differs in the large spinose head.

In shape, *quadridens* and *robinsoni* are quite similar, but the latter has a sessile first segment.

5*a*. Group **gabbii** nova.

In the almost edentate mandibles, *gabbii* Bl. differs from all the preceding groups, but its relation to groups *canadensis* and *simillima* is shown by the broad, sessile, first abdominal segment. There is no distinct pygidium.

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* Trans. Am. Ent. Soc., xxv, 1898-99.

† May possibly belong to 3. Group *simillima*.

The *M. capitata* Smith seems to differ only from this group by the larger, spinose head.

6. Group **occidentalis.***

Females.

a. Thorax elongate or pyriform.

Nortoni Bl., *formosa* Bl., *balopilus* Bl., *altamira* Bl., *nigriceps* Cress.

aa. Thorax shorter, hexagonal.

Cressoni, *toluca*, *ariadne*, *solola*, *xalisco*, all of Blake.

Males.

a. First segment distinctly nodose.

Macilenta Bl., *apicalata* Bl., *Wilsoni* Cres., *azteca* Bl.

8. Group **imperialis.**

Orizaba Bl.

11. Group **hexagona.**

Oajaca Bl., *palliceps* Cress., *leona* Bl.

12. Group **scrupea.**

Tolteca, *cubensis*, *cinaloa*, *yucatana*, all of Blake.

THE HARRIS CLUB is the name which has been chosen for Boston's new entomological society, whose second meeting was held in the Puritan Building, 35 Court street, on the evening of December 15, 1899. Twelve persons attended the meeting, of whom four—Messrs. John Lowell, Lawrence Brooks, A. H. Clark and C. F. Bowers—were new members. Mr. H. H. Newcomb showed a double cocoon made by larvæ of *Samia cynthia;* outwardly it gave no hint of abnormality, but sectioning disclosed two inner chambers, placed end to end, each sheltering a pupa. Both pupæ had died prematurely. Some dwarf imagos of the same species, reared from underfed larvæ by Mr. F. H. Foster, were also shown. Both sexes are represented in the series. Mr. Lowell told of experiments made by him in the taming of butterflies; considerable success was had with *Papilio asterias*, which has a habit of patrolling a definite area, and is not easily frightened away. Mr. E. B. Clapp gave an account of a collecting trip to Florida, and exhibited some Florida specimens of *Neonympha eurytris* which differ markedly from those commonly taken in the North. Mr. Clark reported the capture of a specimen of *Melitæa phæton* var. *superba* Strk. in Newton, Mass.—W. L. W. FIELD, *Secretary*.

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* *Rubricepis* Cress. from Cuba, *istapa* Bl. from Honduras, *proserpina* Bl. from same region probably belong here. These are the only three exotic species described by these authors which I have not seen.

ENTOMOLOGICAL NEWS.

[The Conductors of ENTOMOLOGICAL NEWS solicit and will thankfully receive items of news likely to interest its readers from any source. The author's name will be given in each case, for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and, as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for a certain issue. Twenty-five "extras," without change in form, will be given free, when they are wanted; and this should be so stated on the MS., along with the number desired. The receipt of all papers will be acknowledged.—ED.

PHILADELPHIA, PA., MARCH, 1900.

WE had printed on the NEWS mailing envelopes for last month the words "PLEASE DO NOT FOLD," but were compelled to cut them out by the Post Office authorities. This month we have pasted slips over them, as unfortunately our mailing envelopes have been printed in advance for the entire year. If your copy of the NEWS is neatly folded into halves and any plates ruined you have no redress and must grin and bear it, as "Uncle Sam" prefers to have it that way.

SCIENCE IN THE HIGH SCHOOLS.

To the Editor of the Leader:

Why should pupils be compelled to study the anatomy of bugs and small animals in the high schools? It is of no use whatever, unless one is going to be a scientist or an explorer. Girls are not supposed to be either, and yet the girls have to study with the boys in the same rooms. It makes them feel out of place, and besides, what use is it in after life? Can not some more useful study, for instance, French, be substituted for it? Most of the pupils have a natural abhorrence of bugs and other small animals, and when they are dead it makes it next to impossible to handle them. Also, the teachers allow the bugs to lie on the tables day after day, which breeds disease among the pupils. Why do they allow it? Why do they compel the pupils to study something they detest? Those who dislike it dread the hour during which they must pull the legs off of harmless animals. If the Board of Education thinks science is a necessary study to one's education, why do they not make it an extra study like

music, drawing, or reading? Either one or all three are considered necessary if one is out in society. One does not converse about bugs, as a rule, but more about music, or something more interesting than bugs. Can not something be done for the pupils of the high schools who dislike bugs and everything connected with them?

A HIGH SCHOOL PUPIL.

Cleveland, O., Leader, December 19, 1897.

Prof. F. M. Webster sent in the above clipping and asked whether Lepidopterists are bug hunters. Of course Lepidopterists are not bug hunters. Bug hunters are Coleopterists, Dipterists, Hemipterists, etc., including economic entomologists. Of course, "High School Pupul" is correct. Polite society cannot tolerate bugs. Just imagine a social gathering of the élite of the town discussing bugs. Then, there remains the horrible idea of the conveyance of disease. Again, some of the pupils might become interested in bugs and neglect French and music and then be ostracized by polite society; what a cruel fate! It does seem an unmitigated outrage to compel "High School Pupil" to pull off the legs of beetles, and something should really be done. "High School Pupil" will doubtless become a politican (although for this profession French and music are not essential), and give the non élite of society nice liquid mud to drink and filthy streets to walk through (the élite of society ride behind cobs).* The whole subject is painful, and our eyes grow so misty with tears that we must cease.

PROF. JOHN B. SMITH'S Check-List of the Lepidoptera of Boreal America is out of print and cannot be supplied.

IN the issue for December (p. 293) reference was made to the occurrence of "*Actias luna*" in Mexico. Since writing the note I have received the bulletin of the "Laboratoire d'Etudes des Soies" of Lyon, in which M. Sonthonnax describes as a new species the Mexican moth which much resembles *A. luna*. The differences are slight, but in the six or eight specimens which I have examined of *Tropæa truncatipennis*, as the moth is now called, there is no variation whatever toward the typical *A. luna*. The ♂♂ have the primaries distinctly produced at the apex and truncated; the tails are longer and broader in proportion than in *A. luna;* the maroon border is much more distinct, and the moth itself considerably larger.—O. W. BARRETT, Museo, Tacubaya, Mex.

* Cobs are horses with the tails sawn off pretty close. This is not nearly as painful as pulling the legs off of beetles and other bugs.

DEPARTMENT OF ECONOMIC ENTOMOLOGY.

Edited by Prof. JOHN B. SMITH, Sc. D., New Brunswick, N. J.

Papers for this department are solicited. They should be sent to the editor' Prof. John B. Smith, Sc.D., New Brunswick, N. J.

SOME RUSSIAN ECONOMIC ENTOMOLOGY.

By E. V. WILCOX, Department of Agriculture, Washington, D. C.

As is well known to all scientific workers, the Russians are very active along most lines of natural science, and the published results of their investigations are of great value and importance. Unfortunately these results are for the most part published in the Russian language, and are, therefore, less accessible to the average worker than they would be if published in French or German. Frequently abstracts are published by the authors in French or German periodicals, but the complete articles and illustrations are for the most part found only in the original Russian publications.

It is the purpose of this note to call attention to a few articles in economic entomology which may be of interest to American workers. The articles referred to are found in two publications. The one is called "Selskoe Khozyaistvo i Lyesovodstvo," and is published in St. Petersburg by the Ministry of Agriculture and Imperial Domains. It is a very valuable agricultural journal, and contains articles on all agricultural and forestry subjects. The other publication mentioned is the "Year Book" of the St. Petersburg Forestry Institute, the first number of which was published in 1886. The following is a list of the more important articles from these two publications which the writer has had occasion to read during entomological work:

Concerning the grasshoppers which are injurious to grains and grasses in the governments of Perm, Orenburg and Tobolsk, I. A. Porchinski (Selsk. Khoz. i Lyesov., 1895, No. 1, pp. 79-108, figs. 16).—A discussion of the parasities of grasshoppers and of the steppe or Russian species.

The nun and its associates in the forests of middle and eastern Russia during the summer of 1894, I. Shevuirev (Selsk. Khoz. i Lyesov., 1895, No. 8, pp. 471-489).—Notes on *Ocneria monacha*, *O. dispar*, *Tomicus typographus*, *Trachea piniperda* and other forest insects.

Diseases of tobacco in Tashkent, their causes, and measures for combating them, V. Polovtzov (Selsk. Khoz. i Lyesov., 1895, No. 2, pp. 109-136).—A detailed account of the life history, habits, host plants and remedies for *Siphonophora scabiosæ*.

Combating injurious forest insects in Bavaria, V. Ogievski (Selsk. Khoz., i Lyesov., 1895, No. 9, pp. 31-44.)—An account of species of *Tomicus*, *Hylesinus*, *Hylobius* and *Pissodes*.

Combating phylloxera, P. Stroev (Selsk. Khoz. i Lyesov., 1895, No. 10. pp. 183-208, figs. 22).—A general discussion of the forms and life history of the insect, with recommendation of remedies.

Sericulture in the province of Turkestan, A. Shakhnazarov (Selsk. Khoz. i Lyesov., 1896, No. 5, pp. 137-153).—A study of the actual condition of sericulture in Turkestan, with an account of the extent and future of the industry.

Combating phylloxera in Russia, B. Witmer (Selsk. Khoz. i Lyesov., 1896, No. 6, pg. 375-407 ; pp. 609-625).—A discussion of methods adopted in different parts of Russia in fighting this insect.

Observations on bark beetles in 1895, G. Jacobson (Selsk. Khos. i Lyesov., 1896, No. 6, pp. 419-442, figs. 11).—Notes on the 20 species of bark beetles.

Destructive increase of bark beetles in central Russia from 1882-94 and experiments in combating them, I. Shevuirev (Selsk. Khoz. i Lyesov., 1896, No. 10, pp. 523-545).—Notes on *Polygraphus*, *Xyleborus* and other species.

Apiculture, N. Sharov (Selsk. Khoz. i Lyesov., 1896, No. 11, pp. 751-770).—A general discussion of the subject.

Injurious insects of Semiretchinsk, I. Ingenitzki (Selsk. Khoz. i Lyesov. 1897, No. 1, pp. 177-197, figs. 3).—An account of *Pachytylus migratorius*, *Caloptenus italicus*, and species of Psyche, Agrotis, etc.

Insects injurious to the sunflower, A. Krulikovski (Selsk. Khoz. i Lyesov., 1897, No. 6, pp. 585-598, figs. 10).—Notes on *Agapanthia dahlii* species of Clytus, Strangalia, Leptura, Heliothis, etc.

Combating locusts in the Danube delta, 1884-88 and 1893-95, E. Rekalo (Selsk. Khos. i Lyesov., 1897, No. 10, pp. 99-125).—An elaborate study of the methods of fighting locusts.

Injurious field insects in the government of Ufa, S. Torski (Selsk. Khos. i Lyesov., 1897, No. 1, pp. 395-411).—Notes on species of *Trachea*, *Mamestra*, *Entomocetis*, etc.

The enemies of agriculture in the Trans-Ural region, Y. Polferov (Selsk. Khoz. i Lyesov., 1897, No. 12, pp. 583-593).—Notes on grasshoppers, the corn weevil, field mice, etc.

Injurious insects in the government of Kiev, S. Torski (Selsk. Khoz. i Lyesov., 1898, No. 2, pp. 413-427).—Notes on *Gastropacha neustria*, *Ocneria dispar*, *O. monacha*, etc.

Simple apiculture as a result of the work of the Agricultural Society in the central zone of European Russia, A. Popov (Selsk. Khoz. i Lyesov., 1898, No. 5, pp. 347-383 ; 6, pp. 577-616).—An elaborate account of bee culture in this region.

Tabanidæ and a simple method of destroying them, I. Porchinski (Selsk. Khoz. i Lyesov., 1899, No. 3, pp. 557-573).—The author's obser-

vations were made upon species of *Tabanus*, *Chlorops* and *Hæmatopota*. Species of the first two named genera have the habit of darting down upon the surface of pools to take water, and advantage was taken of this fact in devising a remedy for their destruction. Pools were covered with films of oil and the insects were destroyed by coming in contact with this substance.

Injury caused to hazel trees in Crimea by a scale insect (*Lecanium corni*, Bouché, or *L. robiniarum*, Doug), S. Mokrzhetzki (Selsk. Khoz. i Lyesov., 1899, No. 2, pp. 413-420, figs. 4).

General survey of the life history of injurious insects and means of combating them, I. Shevuirev (Selsk. Khoz. i Lyesov., 1899, No. 6, pp. 587-628).—Economic notes on a large number of noxious insects.

Combating the enemies of agriculture, V. Morachevski (Selsk. Khoz. i Lyesov., 1899, No. 8, pp. 193-225).—Notes on Orthoptera, especially *Pachytylus migratorius*, and a detailed discussion of the means adopted in different governments of Russia for fighting them.

Combating the enemies of agriculture, V. Morachevski (Selsk. Khoz. i Lyesov., 1899, No. 9, pp. 445-454).—Notes on species of *Agrotis*, *Anisoplia* and the Hessian fly.

Materials for the study of the geographical distribution of bark beetles in Russia, I. Shevuirev (Ezhegod. Lyesn. Inst., St. Petersburg, 2 (1888), pp. 173-183.

Pissodes strobili, N. Zhilyakov (Ezhegod. Lyesn. Inst., St. Petersburg, 3 (1888), pp. 113, 114, figs. 2).

The restraing influence of the weather of 1888 upon plants and insects, A. A. Silantev (Ezhegod. Lyesn. Inst., St. Petersburg, 3 (1888), pp. 115-118).—Notes on species of *Melolontha*, *Tomicus*, *Lophyrus*, etc.

Entomological notes, A. A. Silantev (Ezhegod. Lyesn. Inst., St. Petersburg, 3 (1888), pp. 119-121).—Notes on *Cryphalus tiliæ*, *Chermes pini*, *Lymexylon dermestoides*, etc.

The galleries of bark beetles, N. A. Kholodkovski (Ezhegod. Lyesn. Inst., St. Petersburg, 3 (1888), pp. 181-197, figs. 13).—Notes on the habits and burrows of a large number of spceies of Scolytidæ.

The biology of bark beetles, A. A. Silantev (Ezhegod. Lyesn. Inst., St. Petersburg, 4 (1891), pp. 223-231, figs. 2).—Notes on species of *Tomicus*, *Myelophilus*, *Hylastes*, etc.

Biology and classification of the genus *Chermes*, N. A. Kholodkovski (Ezhegod. Lyesn. Inst. St. Petersburg, 4 (1891), pp. 255-290, figs. 17).—A detailed account of a large number of species of this genus.

This brief list of articles may be of service to economic entomologists in America if in no other way than by calling attention to the existence of articles of considerable size upon definite entomological subjects which affect us in this country. Many of these articles are abstracted by the writer at some length for the *Experiment Station Record*. It is hoped, however, that the brief notes added to most of the titles will serve to indicate the general trend of each article.

Entomological Literature.

COMPILED BY P. P. CALVERT.

Under the above head it is intended to mention papers received at the Academy of Natural Sciences of Philadelphia pertaining to the Entomology of the Americas (North and South). Articles irrelevant to American entomology will not be noted. Contributions to the anatomy, physiology and embryology of insects, however, relating to American or exotic species, will be recorded. The numbers in HEAVY-FACED TYPE refer to the journals, as numbered in the following list, in which the papers are published; * denotes that the paper in question contains descriptions of North American forms. Titles of all articles in foreign languages are translated into English; usually such articles are written in the same language as the title of the journal containing them, but when such articles are in other languages than English, French, German or Italian, this fact is indicated in brackets.

4. The Canadian Entomologist, London, Ont., 1900.—**5.** Psyche, Cambridge, Mass., Feb., 1900.—**8.** The Entomologist's Monthly Magazine, London, Feb., 1900.—**9.** The Entomologist, London, Feb., 1900.—**11.** The Annals and Magazine of Natural History, London, Jan., 1900.—**13.** Comptes Rendus. Société de Biologie, Paris, 1900.—**15.** Biologia Centrali-Americana, London, pt. cli, Nov., '99. Recd. Feb. 5, 1900.—**21.** The Entomologist's Record, London, Jan. 15, 1900.—**36.** Transactions, Entomological Society of London, 1899, pt. iv., Dec. 30.—**74.** Naturwissenschaftliche Wochenschrift, Berlin, 1900.—**78.** The Gardener's Chronicle, London, 1900.—**86a.** Annales, Société Entomologique de France, Paris, 1898, Trimestres 1 et 2, Oct. '98; 3, Dec., '98; 4, May. '99; all rec'd. Jan., 1900.—**86b.** Bulletin of the same, 1898, rec'd Jan., 1900 — **122.** Transactions, City of London Entomological and Natural History Society, 1898. Recd. Jan., 1900.

THE GENERAL SUBJECT.—Anon. Henry Herbert Lyman [Biographical notice], portrait, **4,** Jan.—**Anon.** The rôle of leucocytes in histolysis of the muscles of the bee during metamorphosis, Revue Generale des Sciences, Paris, Dec. 30, '99.—**Boas, J. E. V.** New remarks on the metamorphoses of insects [in Danish], 1 pl., Oversigt kongelige danske Videnskabernes Selskabs Forhandlinger, 1899, No. 4, Copenhagen. —**Bordage, E.**—On regeneration in the Phasmids, **86a,** 1 and 2.—**Brunner von Wattenwyl.** Note on the coloration of insects [translation], **21.—Burr, M.** Brunner von Wattenwyl, portrait, **21** —**Causard, M.** On the rôle of air in the last moult of aquatic nymphs, **86b.** —**Clement, A. L.** Observations on different anomalies in insects, figs., **86b.—Dominique, J.** Parthenogenesis and thelytokie in the Phasmidæ, Bulletins, Société des Sciences Naturelles de l'Ouest de la France, ix, 2, Nantes, June 30, '99. Recd. Jan. 26, 1900.—**Gadeau de Kerville, H.** On tetratological forking of the feet, the antennæ and palps of insects, figs., **86b.—Lucas, R.** Insects in general, and **Seidlitz, G.** Coleoptera in Review of scientific results in the field of Entomology during the year 1896, Archiv für Naturgeschichte lxiii, ii, 2, 1 Hälfte, Berlin, Nov., '99.—**V. L.** On the development of insects, with

especial reference to the elytra of beetles, **74,** Jan. 7.—**Perez, C.** On muscular histolysis in insects, **13,** Jan. 6.—**Pic, M.** List of his own zoological publications (1889-1897), **86a,** 1 and 2.—**Prout, L. B.** On some heredity experiments with *Coremia ferrugata*, **122.**—**Vignon, P.** Criticism of the vesicular theory of secretion, figs. [special reference to Diptera], Notes et Revue, Archives de Zoologie Experimentale et Generale (3), vii, 2, Paris, Dec. 20, '99.—**Witchell, C. A.** Stray notes on mimicry, Zoologist, London, Jan. 15, 1900.

ECONOMIC ENTOMOLOGY.—Anon. Phylloxera in Italy, Revue Scientifique, Paris, Jan. 20, 1900.—**Fuller, C.** Notes and descriptions of some species of Western Australian Coccidæ, 1 pl., **36.**—**Galli-Valerio, B.** Do the fleas of rats and mice play an important rôle in the transmission of bubonic plague to man? Figs. Centralblatt für Bakteriologie, Jena, Jan. 6, 1900.—**Gennadius, P.** Treatment of psoriasis of Hesperidæ in the Levant, **86b.**—**Giard, A.** The army worm in France, **86b.**—**Laveran.** On the subject of the destruction of the larvæ of mosquitoes by oil and petroleum, **13,** Jan. 20.—**Lesne, P.,** and **Martin, J.** Notes on some attempts at destruction of the kola-nut weevil (*Balanogastris kolæ* Desbr.), **86b.**—**Lounsbury, C. P.** Insect bites and the effects thereof, **4,** Jan.—**Pergande, T.** A new species of plant-louse injurious to violets,* **4,** Feb —**Prowazek, S.** On the natural history of the "Rapserdfloh" (*Psylliodes chrysocephala*), figs., **74,** Jan. 14.—**Simon, E.** On a fabric made from spiders' silk in Madagascar, **86b.**—**W. S.** The "Hatfield" cure for red-spider, **78,** Feb. 3.—**Tangye, E.** Trapping the codlin moth, **78,** Jan. 27.—**Webster, F. M.,** and **Mally, C. W.** The purslane sawfly, *Schizocerus Zabriskei* Ashm. MS., figs., **4,** Feb.—**Wilcox, E. V.** Abstracts of recent literature, Experiment Station Record, xi, 4, Washington, '99.

ARACHNIDA.—Banks, N, On two genera of mites, **4,** Feb.—**Cambridge, F. O. P.** Arachnida Araneidea, vol. ii, pp. 65-80, pl. v,* **15.**—**Lomann, J. C. C.** The Opilionidæ of the Plate Collection, 1 pl. Fauna Chilensis, Bd. ii, Heft 1. Jena, Gustav Fischer, Dec. 20, 1899.—**Simon, E.** Description of a new senoculous genus (*Symposia*) of the family Agelenidæ, **86b.**—**Id.** Description of a new genus of Arachnida, family Lycosidæ, **86b.**—**Trouessart, E.** Preliminary diagnoses of new species of plumicolous Acarina, additions and corrections to the subfamily of the Analgesinæ, pls.,* Bulletin, Société d'Etudes Scientifiques d'Angers (n. s.), xxviii, '99.—**Id.** Preliminary diagnoses of new species of plumicolous Sarcoptidæ (three papers),* **86b.**

PROTOTRACHEATA.—Bouvier, E. L. On the structure of *Peripatus Tholloni* Bouv., **86b.**

MYRIAPODA.—Brölemann, H. W. Voyage of M. E. Simon to Venezuela (Dec., 1897-Aug., 1888), 27th memoir: Myriapods, 8 pls., figs, **86a,** 3.—**Id.** Myriapods from High and Low Sarare, Venezuela, given by M. F. Geay to the Museum of Natural History of Paris, 2 pls., **86a,** 3.—**de Zograf, O.** On the lateral cephalic organs of *Glomeris*, **11.**

ORTHOPTERA.—Bordage, E. See the General Subject.—**Dominique, J.** See the General Subject.—**Hancock, J. L.** Notes on species of the Tettigian group of Orthoptera,* **4,** Jan.—**Rehn, J. A. G.** *Melanoplus differentialis* in New Jersey and Pennsylvania, **4,** Jan.—**Sayce, O. A.** On the structure of the alimentary system of *Gryllotalpa australis* (Erichs.), with some physiological notes, 2 pls., Proceedings, Royal Society of Victoria, xi (n. s.), pt. ii, Melbourne, '99.

NEUROPTERA.—McLachlan, R. Psocids on the wing: a query, **8.—Needham, J. G.** How to rear nymphs of dragonflies [extract], **8.**

HEMIPTERA.—Baker, C. F. Four new species of *Platymetopius*,* **4,** Feb.—**Bergroth, E.** Description of two new *Reduviidæ*,* **86b.—Champion, G. C.** Rhynchota Heteroptera, vol. ii, pp. 265–288, pl. xvi,* **15.—Enock, F.** [Oviposition of *Nepa*], **36,** Proceedings.—**Fowler, W. W.** Rhynchota Homoptera, vol. ii, pp. 249–256, pl. xvi [*Tettigonia*],* **15.—Giard, A.** On the scale insects of the genus *Orthezia* Bosc., **86b.—Hempel, A.** Descriptions of three new species of Coccidæ from Brazil, **4,** Jan.—**Johnson, W. G.** The destructive green-pea louse, figs.,* **4,** Feb.—**King, G. B.** Bibliography of Massachusetts Coccidæ: supplementary to the knowledge of Massachusetts Coccidæ, **4,** Jan.—**Id.** The fifth species of *Kermes* [*andrei*], **5.—Kirkaldy, G. W.** On the nomenclature of the genera of the Rhynchota, Heteroptera and Auchenorrhynchous Homoptera, **9.—Martin, J.** Descriptions of new species of Nepidæ, figs.,* **86b.—Pergande, T.** See Economic Entomology.*

COLEOPTERA.—Arrow, G. J. On sexual dimorphism in the Rutelid genus *Parastasia* with descriptions of new species, 1 pl., **36—Bennett.** Notes on the habits of *Goliathus druryi*, **36,** Proceedings.—**Boileau, H.** Note on the "Catalogue of the Lucanidæ," by M. Carl Felsche, **86a,** 3.—**Bordas, L.** Contribution to the study of the reproductive organs of the Coleoptera: male genital glands of the Cleridæ, 1 pl., **86a,** 4.—**Clouët des Pesruches, L.** Notes on various Aphodiidæ, **86a,** 1 and 2.—**Croissandeau, J.** Monograph of the Scydmænidæ (cont.), 14 pls., **86a,** 1 and 2.—**Dierckx, F.** The pygidial glands of *Pheropsophus Bohemani* Chaud., figs., Zoologischer Anzeiger, Leipsic, Jan. 8, 1900.—**Gahan, C. J.** Et al. [Stings of beetles], **36,** Proceedings.—**Giard, A.** See Hymenoptera.—**Grouvelle, A.** New Clavicorns from America, 2nd memoir,* **86a,** 3.—**Guillebeau, F.** Revision of the genus *Scydmænus* Latr. (*Eumicrus* Lap.), **86a,** 1 and 2.—**Heasler, H.** Beetle coloration, **122.—Lesne, P.** Revision of the Coleoptera of the family Bostrychidæ, 3rd memoir, figs.,* **86a,** 4.—**Id.** Description of the adult larva of *Julodis albopilosa* Chevr., and remarks on various characters of the larvæ of Buprestidæ, figs., **86b.—Leveillé, A.** Description of five new Temnochilidæ, **86b.—V. L.** See the General Subject.—**Raffray, A.** Diagnoses of three new Pselaphidæ, **86b.—Seidlitz, G.** See the General Subject.

DIPTERA.—Coquillett, D. W. New genera and species of Ephydridæ,* **4,** Feb.—**Ricardo, G.** Notes on the Pangoninæ of the family Tabanidæ in the British Museum Collection, 1 pl., **11.—Vignon, P.** See the General Subject.—**Wahl, B** On the tracheal system and the imaginal disks of the larvæ of *Eristalis tenax*, figs., 5 pls., Arbeiten des Zoologischen Instituten, Universität Wien, xii, 1, '99.

LEPIDOPTERA.—Barnes, W. New species and varieties of North American Lepidoptera,* **4,** Feb.—**Dyar, H. G.** *Bombyx cunea*, **4,** Jan.—**Id.** Critical notes [on J. W. Tutt's British Lepidoptera, vol. i], **21.**—**Id.** Notes on some North American Yponomeutidæ,* **4,** Feb.—**Id.** Life histories of North American Geometridæ, **5.—Fyles, T. W.** *Metzneria lappella* L : a curious life-history, **4,** Jan.—**Grote, A. R.** The neuration of *Argynnis*, **4,** Jan.—**Howard, L. O.** A popular name for *Clisiocampa disstria*, **4,** Feb.—**Hulst, G. D.** A new genus and species of Phycitinæ,* **4,** Jan.—**Mayer. A. G.** On the mating instinct in moths, **5** —**McLachlan, R.** [*Deilephila lineata* in Colorado at 9000 ft], **36,** Proceedings.—**Merrifield, F.,** and **Poulton, E. B.** The color-relation between the pupæ of *Papilio machaon*, *Pieris napi* and many other species, and the surroundings of the larvæ preparing to pupate, **36.**—**Motelay.** Note on a butterfly which is attracted by sight and not by odor of flowers, Actes, Société Linneenne de Bordeaux, liii, '98. Recd. Jan. 26, '1900.—**Prout, L. B.** See the General Subject.—**Slingerland, M. V.** A new popular name for *Clisiocampa disstria* ["forest tentless caterpillar"], **4,** Jan.—**Tutt, J. W.** Migration and dispersal of insects : Lepidoptera, **21.**

HYMENOPTERA.—André, E. Study on the Mutillidæ of the Museum of Paris,* **86a,** 1 and 2.—**Id.** Description of two new ants from Mexico,* **86b.—Anon.** See the General Subject.—**Bethe, A.** Still more on the psychical qualities of ants, Archiv für die gesammte Physiologie (Pflüger's), lxxix, 1 and 2, Bonn, Jan. 18, 1900.—**du Buysson, R.** *Chrysis shanghaiensis* [anatomy], 1 pl., **86a,** 1 and 2.—**Id.** The nest and the larva of *Tripoxylon albitarse* F., 2 pls., **86a,** 1 and 2. —**Cockerell, T. D. A.** Tables for the determination of New Mexico bees, Bulletins, Scientific Laboratories of Denison University, xi, 3, Granville, Ohio, Nov. '98. Recd. Jan. 1900.—**Id.** What is the proper name of *Lophyrus* Latr.? **9.—Dawson, C.,** and **Woodhead, S. A.** The hexagonal structure naturally formed in cooling beeswax, and its influence on the formation of the cells of bees, **11.—Enock, F.** [Life history of *Prestwichia aquatica* Lubb.], **36,** Proceedings.—**Ferton, C.** On the habits of *Sphecodes* Latr. and *Halictus* Latr., **86b.—Forel, A.** Hymenoptera, vol. iii, pp. 105-136 [Formicidæ],* **15.—Giard, A.** On *Cephalonomia* (Hymen. Proctotryp.), parasites of the larvæ of Ptinidæ, **86b.—Id.** On the development of *Litomastix truncatellus* Dalman (Chalcid), **86b.—Kieffer, J. J.** Remarks on the eggs of Cynipidæ, fig., **86b.—Marchal, P.** The evolutionary cycle of *Encyrtus fuscicollis*, **86b.—Robertson, C.** Homologies of the wing veins of Hymenoptera, Science, New York, Jan. 19, 1900.—**Webster, F. M.,** and **Mally, C. W.** See Economic Entomology.*

Doings of Societies.

At the regular monthly meeting of the Newark Entomological Society, held in the Turn Hall January 14th, the following officers were elected: *President*, Mr. S. T. Kemp; *Vice-President*, Mr. O. Buchholz; *Secretary*, Mr. Wm. H. Broadwell; *Treasurer*, Mr. S. Seib; *Librarian*, Mr. J. Engelman, and *Curators*, Mr. H. Brehme and Mr. Bischoff.

WM. H. BROADWELL, *Sec. pro tem.*

At the January meeting of the Feldman Collecting Social, held at the residence of Mr. H. W. Wenzel, 1523 So. 13th St., eleven persons were present.

This being the annual meeting of the society, the President delivered his address, reviewing the progress of the society and dwelling on the good fellowship existing among the members.

Mr. P. Laurent exhibited specimens of a dipteron which he had found at Silver Lake, Wasatch Mts., Utah. Mr. Johnson identified these as belonging to the genus *Chironomus*, and spoke on habits of certain species of that genus. In one instance, at Palatka, Florida, a species was so abundant as to completely cover the fence-posts.

Mr. Laurent also exhibited two specimens of *Soronia ulkei*, taken under fresh chips of wood at Westville, N. J., on May 4th. It is a rare coleopteron in this locality.

Some lumber bored by the larva of *Hylotrupes bajulus* was also shown.

Mr. Bland recorded the capture of *Apion puritana* Fall, in large numbers in May at Westville, N. J.

Mr. H. Wenzel described collecting in swamps along the New Jersey coast. In such places sifting gives good results for many beetles. On Dec. 14th last he had visited a swamp surrounded by high trees and screened from the sun. Here he had found numbers of species not before met with by him, the coleopterous fauna seemng to differ almost entirely from the more open swamps only a short distance beyond. This difference in the faunæ seemed to hold true of all open and closed swamps visited.

Mr. Bland spoke of the abundance of coleoptera in newly-mown hay which had lain on the ground over night, especially Atomaria and small Staphylinidæ.

Mr. Laurent referred to Prof. Smith's remarks, at the last meeting, on the peculiar faunæ of the various canons in the Southwest, and stated that he had found similar conditions existing in the canons of Wasatch Mts., Utah.

The following officers for the ensuing year were elected :

President, Dr. D. M. Castle.

Vice President, Charles W. Johnson.

Secretary, William J. Fox.

Assistant Secretary, C. Few Seiss.

Treasurer, Henry W. Wenzel.

Mr. W. Reinick, 216 Epsley St., Germantown, and Henry G. Harbeck, 1635 N. 15th St., were proposed for membership in the society.

WILLIAM J. FOX,
Secretary.

PERSONS having duplicate copies of the December, 1899, NEWS will kindly return them to the editors, and receive their grateful acknowledgments.

OUT of a few dozen larvæ of *Pyrameis* which I found and raised on the hollyhock (*Althea*) last season at Denver, Colorado, about 90 per cent. were parasitized, the chrysalids of the remainder yielding imagos of *Pyrameis caryæ*. The larvæ were present in swarms on the leaves of the hollyhock from the middle of July to the end of the first week in August. The first imago emerged on August 14th and the last on August 23d. Henry Edwards' description of the early stages credits the species to California, and it has been reported from Utah ; but I think this is the first record of its occurring as far east as Denver. HOMER Y. READ.

OBITUARY.

Richard Henry Meade, the English Dipterologist, died at Bradford, England, December 23d, 1899. He was born in 1814, was a practicing surgeon, and for twenty years a Justice of the Peace. He wrote chiefly on Muscidæ (in the broad sense.) From a sketch by R. McLachlan in Ent. Mo. Mag., February, 1900.